

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-2, SUB 1159  
DOCKET NO. E-7, SUB 1156

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of  
Joint Petition of Duke Energy Carolinas, )  
LLC, and Duke Energy Progress, LLC, for )  
Approval of Competitive Procurement of )  
Renewable Energy Program )  
)  
)

**COMMENTS OF THE  
PUBLIC STAFF  
REGARDING THE  
APPLICATION OF THE  
SOLAR INTEGRATION  
SERVICE CHARGE**

NOW COMES THE PUBLIC STAFF – North Carolina Utilities Commission, by and through its Executive Director, Christopher J. Ayers, and respectfully submits the following comments in response to the Commission’s October 7, 2019, *Order Requesting Comments* (“October 7 Order”) in the above-referenced dockets allowing comments regarding the application of the Solar Integration Service Charge (“SISC”) in the context of the Competitive Procurement of Renewable Energy Resources (“CPRE”) Program pursuant to N.C. Gen. Stat. § 62-110.8(b)(2).

Background

On October 7, 2019, in Docket No. E-100, Sub 158 (“Sub 158 Proceeding”), the Commission issued a Notice of Decision announcing the Commission’s decisions related to the calculation of avoided capacity rates and avoided energy rates that are necessary to ensure the cost-effectiveness of new renewable energy resources procured as part of the CPRE Program. The Notice of Decision stated:

In the interest of timely implementation of the CPRE Program, the Commission finds good cause to issue this Notice of Decision so that Duke and the Independent Administrator of the CPRE Program can calculate avoided capacity rates and avoided energy rates, adjust implementation of the CPRE Program, as necessary, and proceed with the evaluation of proposals submitted in the Tranche 2 CPRE RFP Solicitation.<sup>1</sup>

The Commission further stated in the Notice of Decision, however, that issues related to the SISC remained under consideration,<sup>2</sup> and recognized the potential impacts of the SISC on the CPRE Tranche 2 RFP Solicitation. The Commission therefore issued its October 7 Order in this docket, requesting that the parties respond to three questions related to the application of the SISC to the CPRE Program. The Public Staff's comments regarding each of the Commission questions are provided below:

1. Whether the SISC should apply to the renewable energy facilities that are the subject of proposals in the CPRE Program.

Public Staff witness Thomas testified in his June 21, 2019, testimony in the Sub 158 Proceeding that “[t]he Public Staff agrees that integrating intermittent, non-dispatchable energy sources cause system operators to make decisions and deploy the fleet of Utility-owned generation assets in ways that can increase costs to ratepayers.”<sup>3</sup> Witness Thomas further testified that he believed the methodology used by Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP”) (collectively, “Duke”) to calculate the SISC was reasonable and that

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<sup>1</sup> Notice of Decision at 7-8.

<sup>2</sup> The Public Staff notes the Commission issued a Supplemental Notice of Decision on October 17, 2019, related to the SISC, but we have not modified these comments to reflect the Commission's findings in that Notice. The Public Staff will seek to address any changes or clarifications to its comments in the reply comments due on October 25, 2019.

<sup>3</sup> Direct testimony of Jeff Thomas at 4. (June 21, 2019).

assessing the charge on solar qualifying facilities (“QFs”) is appropriate.<sup>4</sup> This agreement was further memorialized in the Stipulation of Partial Settlement between DEC, DEP, and the Public Staff, filed May 21, 2019 (“SISC Stipulation”). The SISC Stipulation provides that the SISC should apply prospectively to all QF solar generators committing to sell under Duke’s E-100, Sub 158 standard offer avoided cost tariffs, and should also be applied to:

all other solar generators that either have committed to sell or prospectively commit to sell to Duke at future Schedule PP or negotiated avoided cost rates on or after November 1, 2018, unless those solar generators can demonstrate that the facility is capable of operating, and shall contractually agree to operate, in a manner that materially reduces or eliminates the need for additional ancillary service requirements (as reasonably determined by the Companies), through inclusion of energy storage devices, dispatchable contracts, or other mechanisms that materially reduce or eliminate the intermittency of the output from the solar generators (“controlled solar generators”).<sup>5</sup>

The SISC Stipulation further indicated agreement between DEC, DEP, and the Public Staff that it is appropriate to consider the ancillary services costs of adding incremental solar, and the potential applicability of the SISC to solar generation solicited in CPRE Tranche 2 and other future CPRE Tranches.<sup>6</sup> However, the SISC Stipulation did not elaborate further on this topic.

During the evidentiary hearing held in the Sub 158 Proceeding, Public Staff witness Thomas indicated in response to questions regarding the applicability of the SISC to CPRE that the Public Staff did have concerns regarding 20-year terms

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<sup>4</sup> *Id.* at 14.

<sup>5</sup> SISC Stipulation at 4-5.

<sup>6</sup> *Id.* at 6.

contracts being entered into in the CPRE context that did not address these added costs to customers. He further stated that the Public Staff would continue to advocate in the CPRE context for a position that protects ratepayers and seeks to recover the integration costs from the cost-causer.<sup>7</sup>

Since the hearing in the Sub 158 Proceeding, the Public Staff, Duke, and other parties have continued to discuss the applicability of the SISC or some other appropriate integration charge to CPRE Tranche 2. The Public Staff believes that the most straightforward and administratively efficient way to incorporate the ancillary services cost of adding incremental solar through the CPRE Program is through application of the SISC, coupled with a mechanism that allows bidders to avoid the application of the SISC if they can sufficiently demonstrate that the facility will operate in a manner that “materially reduces or eliminates the need for additional ancillary service requirements.” Such mechanisms are currently being discussed as part of the CPRE Tranche 2 Stakeholder discussions, including the proposal by Duke to include a Solar Site Volatility Metric to mitigate solar variability and to ensure that the reduction in variability was actually achieved.<sup>8</sup>

2. If the SISC is to apply to the renewable energy facilities that are the subject of proposals in the CPRE Program, then: (a) how should the SISC be incorporated into the cost-effectiveness limitation set forth in N.C. Gen. Stat. § 62-110.8(b); and (b) how the application of the SISC to the renewable energy

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<sup>7</sup> Sub 158 Proceeding, Transcript Vol. 6, p.428-429.

<sup>8</sup> See Exhibit 11, Requirements for Avoidance of SISC, of the *pro-forma* CPRE Tranche 2 power purchase agreement (“Tranche 2 PPA”), filed as Attachments A and B to Duke’s Notice of Opening of CPRE Tranche 2, in this docket on October 15, 2019. In its notice, Duke acknowledged that the applicability of the SISC to the Tranche 2 PPAs remains to be determined by the Commission, and that once the SISC issue is clarified, the PPAs will be updated and filed with the Commission.

facilities that are the subject of proposals in the CPRE Program is consistent with the treatment of “the utility’s own generating resources.”

Pursuant to N.C. Gen. Stat. § 62-110.8(b), each public utility's procurement obligation shall be capped by “the public utility's current forecast of its avoided cost calculated over the term of the power purchase agreement” to ensure the cost-effectiveness of the procured resources. As such, the Public Staff believes that in the analysis of whether procured resources are cost-effective, the Independent Administrator (“IA”) for the CPRE Program must set the limitation on eligible projects using a forecast of avoided cost rates that is consistent with the methodology most recently approved by the Commission, which in the context of CPRE Tranche 2, will be the Sub 158 Rates. As previously discussed, the Public Staff in the Sub 158 Proceeding supported the application of the SISC to intermittent QFs that cannot demonstrate that they reduce or eliminate the need for additional ancillary service requirements. To treat CPRE projects consistently with other QFs seeking to sell their output at avoided cost rates, the Public Staff believes that the cost-effectiveness limitation must also appropriately incorporate the SISC.

Similar to Tranche 1, the CPRE Tranche 2 RFP requires bidders to submit bids based on a pricing decrement for each of the nine energy pricing periods approved by the Commission in its Notice of Decision in the Sub 158 Proceeding.<sup>9</sup> To support the transparent application of the SISC to all projects being considered,

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<sup>9</sup> Request for Proposals for the CPRE Program Tranche 2 for DEC and DEP at pp. 11-13, dated October 15, 2019. Available on IA website at: [https://decprerfp2019.accionpower.com/rfp\\_1902/accionhome.asp](https://decprerfp2019.accionpower.com/rfp_1902/accionhome.asp).

the Public Staff supports requiring bidders to incorporate the costs of the SISC into their bid, with the understanding that uncontrolled solar generators selected in Tranche 2 will be responsible for paying the SISC as a reduction in their bid price. Since bidders may choose to make different assumptions regarding their ability to mitigate the applicability of the SISC to their project, the Public Staff believes it may be most appropriate for the IA to assume all bidders (including utility self-build projects) to be subject to the full SISC, unless they meet the necessary steps to have the SISC reduced or waived for the month in question.<sup>10</sup> However, because the SISC will be paid by all uncontrolled solar generators (including utility self-build projects) as a decrement to their bid price, it is not necessary for the IA to incorporate the SISC into its evaluation process. This framework treats all bidders equitably, but also shifts the risk to bidders to meet the volatility reduction targets, as well as provides bidders with a price signal to incentivize the development of projects that have reduced volatility.

One of the most significant challenges facing the application of the SISC to Tranche 2 of the CPRE is determining the appropriate amount of the SISC that should apply in each utility's service territories. In the SISC Stipulation, DEC, DEP, and the Public Staff agreed that Astrapé Study's quantification of the Companies' average Existing Plus Transition level of ancillary services costs, in the amounts of \$1.10/MWh for DEC and \$2.39/MWh for DEP, are reasonable and appropriate

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<sup>10</sup> Under Duke's proposed Solar Site Volatility Metric included in Exhibit 11 to the *pro-forma* CPRE Tranche 2 PPA, bidders would have to submit monthly templates documenting 5-minute solar output from their facilities and attesting that they met certain target volatility reductions in order to have the SISC fully or partially reduced. If they meet the volatility reductions, then their invoiced payments would be adjusted to reflect the reduction in the applicable SISC.

for purposes of fixing the initial SISC, but that Duke should biennially review and update each utility's average and incremental ancillary services costs, and adjust (or "refresh") the SISC to reflect the changes.<sup>11</sup> The Public Staff, DEC, and DEP further agreed, however, that the SISC should be capped, "to mitigate the risk . . . of currently unquantifiable future increases in DEC's and DEP's average ancillary services costs attributable to the installation of incremental solar on the Companies' systems during the term of Sub 158 Vintage PPAs."<sup>12</sup> The cap would be based on the projections of installed solar included in the most recent utility integrated resource plans (IRPs) at the end of the current Sub 158 biennial period, and calculated to reflect the incremental cost for adding the last 100 MW of solar generation forecasted to be installed within the biennial vintage period. Under the SISC Stipulation, DEC, DEP, and the Public Staff agreed that the following incremental caps on the SISC were reasonable and appropriate for Sub 158 vintage solar generators: DEC: \$3.22/MWh; and DEP: \$6.70/MWh.

Applying the same logic in the context of 20-year PPAs being entered into under the CPRE Program poses additional challenges, however, since the ability to reliably forecast the amount of additional solar generation added to each utility's system over that period and calculate the applicable ancillary service cost cap may be more uncertain. In addition, as indicated by the North Carolina Sustainable Energy Association ("NCSEA") and the North Carolina Clean Energy Business Alliance ("NCCEBA") in their post-hearing brief in the Sub 158 Proceeding, the

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<sup>11</sup> SISC Stipulation at 7-8.

<sup>12</sup> *Id.* at 8-9.

uncertainty regarding the refresh would potentially result in bidders assuming the worst-case scenario that the SISC would quickly reach the cap, increasing the costs of the bids beyond what may otherwise be anticipated.<sup>13</sup> These higher bids would either result in (a) winning bids costing customers more to offset the risk assumed by bidders, or (b) some projects that would otherwise have been found cost-effective projects not being selected.

The Public Staff's primary concern is to ensure that the cost-effectiveness limitation in N.C. Gen. Stat. § 62-110.8(b)(2) is maintained. Customers will ultimately be responsible for paying the additional ancillary service costs for all uncontrolled solar projects selected, whether through the SISC assigned to bids or through additional fuel and energy costs recovered by the utilities, so it is imperative that the cost-effectiveness analysis includes a reasonable quantification of the integration costs to ensure that the total costs of procuring the renewable energy remains below avoided costs. However, recognizing that the integration costs over a 20-year term cannot be quantified with precision, the goal should be to ensure that the quantification is sufficiently reasonable so that customers will be indifferent with regard to whether the costs were captured in the SISC or separately recovered by the utilities.

In order to support the timely and cost-effective implementation of the CPRE Program, while also balancing the value of providing better cost certainty to potential market participants, the Public Staff believes that it would be appropriate

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<sup>13</sup> Post-Hearing Brief of NCCEBA and NCSEA filed in Docket No. E-100, Sub 158, at 76. (September 4, 2019).

for the Commission to consider using a fixed SISC for CPRE Tranche 2 purposes. This charge could be the same flat amount agreed to by DEC, DEP, and the Public Staff in the SISC Stipulation (\$1.10/MWh for DEC and \$2.39/MWh for DEP), or some other amount that reflects the average ancillary service costs to integrate the amount of solar anticipated to be added in Tranche 2. While this approach may not fully capture changes in the integration costs over the 20-year PPA that result from higher solar penetration rates, it would assign the portion of these costs that is currently known and measurable to the bidders, as well as provide a clear price signal to bidders to incentivize them to reduce the volatility of their generation. All CPRE Tranche 2 participants, including third parties, utility self-build proposals, and asset acquisitions should be required to incorporate the SISC, or their assumptions about their ability to mitigate or reduce its application to their projects in their bids for consideration by the IA in determining the most cost-effective options.

The Commission further raised the question of how the application of the SISC to renewable energy facilities participating in the CPRE Program is consistent with the requirement in N.C. Gen. Stat. § 62-110.8(b) that facilities commit to allow DEC and DEP to “dispatch, operate, and control the solicited renewable energy facilities in the same manner as the utility’s own generating resources.” The Public Staff notes that similar to the *pro-forma* PPA approved for CPRE Tranche 1, the proposed *pro-forma* CPRE Tranche 2 PPA requires the Sellers to fully comply with all “System Operator Instructions,” which includes control instructions. Control instructions are defined as:

any System Operator Instruction to dispatch, operate, and/or control the Facility in the same manner and/or for any reason as the System Operator may, in its sole discretion, dispatch, operate, and/or control Buyer's own generating resources and power purchase arrangements used to provide service to Buyer's native load customers.<sup>14</sup>

The *pro-forma* CPRE Tranche 2 PPA also allows for control instructions of up to five percent (5%) of expected annual output for facilities in DEC and ten percent (10%) in DEP to be curtailed without compensation, and has been discussed at length in the context in this docket. These provisions are designed to ensure that the selected facilities are operated in the same manner as the utility's own generating resources and efficiently integrated into the utility's overall system operations, but they do not capture the additional ancillary services costs incurred by the utilities as a result of adding additional intermittent generation to their system, whether through CPRE or other procurements. Further, while these curtailment and dispatch rights are designed to allow the utilities to economically dispatch the projects, they do not provide the utilities with sufficient real-time control of the resources (including their own intermittent generation) to offset the additional ancillary service costs resulting from the volatility of intermittent resources.

The Public Staff believes that it is appropriate both in the CPRE context and in the context of other future utility resource acquisitions for the additional ancillary service requirements of any facility be considered. As previously stated, any utility self-build and asset acquisition projects bid into CPRE must be held to the same

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<sup>14</sup> Section 1.26 of *pro-forma* CPRE Tranche 2 PPA.

cost-effectiveness standard as other third-party projects, and the SISC (or their assumptions about their ability to mitigate the change) should also be included in their bids. In the event a utility self-build project or asset acquisition project is selected, the SISC should be backed out of their cost recovery for the facility, since those costs, unless they can demonstrate that they reduced or mitigated the SISC through the Solar Site Volatility Metric (or other approved mechanism), since they would be recovering the unmitigated portion of those costs in the fuel rider.

Further, in the event the utilities seek to add future generation resources outside of CPRE that trigger additional load-following requirements, the Public Staff believes that it is appropriate for those additional ancillary service costs to be considered as part of the application for a certificate of public convenience and necessity for the facilities.<sup>15</sup> The Public Staff does not, however, interpret this requirement to mean that the ancillary service costs associated with the operation of existing utility-owned resources should be reconsidered as part of the CPRE process.

3. If the SISC is not to apply to the renewable energy facilities that are the subject of proposals in the CPRE Program, then whether and how this approach is consistent with the provisions of N.C. Gen Stat. § 62-110.8.

As indicated above, the Public Staff supports the application of the SISC, or a comparable charge, to new solar facilities that are the subject of proposals in the CPRE Program, unless the bidder can demonstrate that the facility is capable of operating, and contractually agrees to operate, in a manner that materially reduces

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<sup>15</sup> The potential for a utility addition such as an advanced combustion turbine (CT) or combined cycle facility to create additional ancillary service costs are generally low, since these resources generally have high availability rates and provide a wide range of dispatchability.

or eliminates the need for additional ancillary service requirements. The Public Staff believes that this approach is consistent with the intent of N.C. Gen Stat. § 62-110.8.

WHEREFORE, the Public Staff respectfully requests that the Commission take the foregoing comments and recommendations into consideration.

Respectfully submitted this the 18<sup>th</sup> day of October, 2019.

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**CERTIFICATE OF SERVICE**

I certify that a copy of these comments has been served on all parties of record or their attorneys, or both, by United States mail, first class or better; by hand delivery; or by means of facsimile or electronic delivery upon agreement of the receiving party.

This the 18<sup>th</sup> day of October, 2019.

Electronically submitted  
/s/ Tim R. Dodge